

Andrea Petri

538 West 120th Street
New York, NY 10027
apetri@phys.columbia.edu
<http://apetri.me>

- EDUCATION** *Laurea Specialistica*, Theoretical Physics, June 2011
Scuola Normale Superiore, Pisa, Italy
Thesis advisor: Prof. Andrea Ferrara
- Master of Arts*, Physics, May 2013
Columbia University
- Master of Philosophy*, Physics, May 2014
Columbia University
- Doctor of Philosophy*, Physics, Expected June 2017
Columbia University
Research advisors: Prof. Zoltàn Haiman, Prof. Morgan May
- POSITIONS** *Graduate student researcher, Columbia University Physics Department* 2011-
- PROFESSIONAL ACTIVITIES** Served as peer reviewer for the American Astronomical Society (AAS) and for the MNRAS journal
- TEACHING** *Graduate student instructor* 2011-
Columbia University, NY, Physics Department
- Introductory Physics Lab (pre-medical) Fall 2011, Spring 2012
 - Introductory Physics Lab (engineers) Fall 2012, Spring 2013
 - Physical Cosmology (TA, grading), Fall 2012
 - Particle Astrophysics and Cosmology (TA, recitations), Spring 2013
 - EKA Advanced Physics Laboratory (TA), Fall 2013-
 - Particle Astrophysics and Cosmology (TA, grading), Spring 2015
 - Particle Astrophysics and Cosmology (TA, recitations, homework solutions writeup), Spring 2016
- Instructor* 2011-
Columbia University, NY, Science Honors Program
Introduction to Modern Cosmology for high school students
- PUBLICATIONS**
- First authored**
1. *Cosmology with photometric weak lensing surveys: constraints with redshift tomography of convergence peaks and moments*

- A. Petri, M. May, Z. Haiman, arXiv:1605.01100, submitted to PRD (under peer review)
2. *Mocking the Weak Lensing universe: the LensTools python computing package*
A.Petri; Astronomy & Computing, Elsevier, **17**, 73-79 (2016)
 3. *Sample variance in weak lensing: how many simulations are required?*
A.Petri, Z.Haiman, M.May; Phys. Rev. D. **93**, 063524 (2016)
 4. *Emulating the CFHTLenS weak lensing data: Cosmological constraints from moments and Minkowski functionals*
A.Petri, J. Liu, Z.Haiman, M.May, L.Hui, J.M.Kratochvil; Phys. Rev. D. **91**, 103511 (2015)
 5. *Impact of spurious shear on cosmological parameter estimates from weak lensing observables*
A.Petri, M.May, Z.Haiman, J.M.Kratochvil; Phys. Rev. D. **90**, 123015 (2014)
 6. *Cosmology with Minkowski Functionals and moments of the weak lensing convergence field*
A.Petri, Z.Haiman, L.Hui, M.May, J.M.Kratochvil; Phys. Rev. D. **88**, 123002 (2013)
 7. *Supermassive black hole ancestors*
A.Petri, A.Ferrara, R.Salvaterra; Mon. Not. R. Astron. Soc. **422**, 1690-1699 (2012)

Collaborations

- *CMB Lensing Beyond the Power Spectrum: Cosmological Constraints from the One-Point PDF and Peak Counts*
J. Liu, J. Coin Hill, B. D. Sherwin, A. Petri, V. Bohm, Z. Haiman, submitted to PRD (under peer review)
- *Consequences of CCD imperfections for cosmology determined by weak lensing surveys: From laboratory measurements to cosmological parameter bias*
Y.Okura, A.Petri, M.May, A.Plazas, T.Tamagawa; Astrophys. Journal, 825-1, **61** (2016)
- *Cosmology constraints from the weak lensing peak counts and the power spectrum in CFHTLenS data*
J.Liu, A.Petri, Z.Haiman, L.Hui, J.M.Kratochvil, M.May; Phys. Rev D. **91**, 063507 (2015)

AWARDS

- Co-recipient of the Allan M. Sachs Teaching Award for contributions to the educational programs in the Columbia University Physics Department (May 2016)
- Bronze medalist, 37th International Physics Olympiad, Singapore (July 2006)

INVITED TALKS

CONFERENCE TALKS

- *Non-gaussian statistics task force: update*
LSST DESC collaboration meeting, Stanford Linear Accelerator Center, Stanford, March 9th 2016
- *Non-gaussian statistics task force: the simulations*
LSST DESC collaboration meeting, Argonne National Laboratory, Chicago, October 28th 2015

- *Constraining cosmology with weak lensing: higher moments in CFHT*
AstroFest 2015, Columbia University, September 11th 2015
- *Cosmology with Minkowski Functionals and Moments of Weak Lensing Fields*
Santa Fe Cosmology Workshop, July 2014
- *Cosmology with Minkowski Functionals and moments of the weak lensing convergence field*
27th Symposium on Relativistic Astrophysics, December 8-13, 2013, Dallas, TX
<http://nsm.utdallas.edu/texas2013/proceedings/4/4/b/Petri.pdf>